Amendments to the Claims

Herein, with respect to the amended claims, please note that "strikeout" matter is shown with larger-than-normal italic letters containing the strikeout horizontal marks such as in this example: ~~*strikeout*~~.

Here is a listing and status of the claims provided by this AMENDMENT AFTER FINAL REJECTION (Enclosed with RCE)

1. (Currently amended) A method of treating vesicles with exogenous material for insertion of the exogenous material into the vesicles, comprising the steps of:

a. statically retaining the vesicles and the exogenous material in a medium in a suspension in a treatment volume in a chamber which includes electrodes, wherein the chamber has a geometric factor (cm^{-1}) defined by the quotient of the electrode gap squared (cm^2) divided by the chamber volume (cm^3),

wherein said geometric factor is less than ~~*or equal to*~~ 0.1 (cm^{-1}) and greater than 0.000001 (cm^{-1}) ,

wherein the suspension of the vesicles, the exogenous material, and the medium is adjusted, such that the suspension in the treatment volume in the chamber has conductivity in a range

spanning greater than 0.001 to less than 100 milliSiemens/cm,

wherein the resistance of the suspension in the chamber is greater than one ohm,

wherein heating in the chamber is limited to low levels,

wherein the suspension is enclosed in the chamber during treatment, wherein the chamber has at least a 2 milliliter capacity, and

b. treating the suspension enclosed in the chamber with one or more pulsed electric fields,

wherein in accordance with a. and b. above, the treatment volume of the suspension is scalable.

2. (Original) The method of claim 1 wherein the chamber is a closed chamber.

3. (Cancelled)

4. (Original) The method of claim 1 wherein the chamber and the contents thereof are sterile.

5. (Original) The method of claim 1 wherein the chamber includes entry and exit ports for entry and removal of the suspension.

6. (Original) The method of claim 1 wherein the electrodes are parallel plate electrodes.

7. (Cancelled)

8. (Original) The method of claim 1 wherein the electric fields include a rectangular voltage pulse waveform to produce a uniform pulse electric field between parallel plate electrodes greater than 100 volts/cm and less than 5,000 volts/cm, substantially uniform throughout the treatment volume.

9. (Cancelled)

10. (Cancelled)

11. (Cancelled)

12. (Cancelled)

13. (Cancelled

14. (Cancelled)

15. (Cancelled)

16. (Original) The method of claim 1 wherein the pulsed electric fields are from electrical pulses which are in a sequence of at least three non-sinusoidal electrical pulses, having field strengths equal to or greater than 100 V/cm, to the material,

wherein the sequence of at least three non-sinusoidal electrical pulses has one, two, or three of the following characteristics: (1) at least two of the at least three pulses differ from each other in pulse amplitude; (2) at least two of the at least three pulses differ from each other in pulse width; and (3) a first pulse interval for a first set of two of the at least three pulses is different from a second pulse interval for a second set of two of the at least three pulses.

17. (Cancelled)

18. (Cancelled)

19. (Original) The method of claim 1 which is carried out in sequential batches.

20. (Original) The method of claim 1 wherein the exogenous material is a therapeutic material.

21. (Original) The method of claim 1 wherein a therapeutic product is formed from the treatment of the vesicles with exogenous material.

22. (Original) The method of claim 1 wherein the exogenous

material is a polynucleotide.

23. (Cancelled)

24. (Original) The method of claim 1 wherein the exogenous material is a polypeptide.

25. (Original) The method of claim 1 wherein the exogenous material is a protein.

26. (Cancelled)

27. (Cancelled)

28. (Currently amended) The method of claim 1 wherein the chamber has a chamber volume, the suspension has a suspension volume, and the suspension volume is greater than the chamber volume, and wherein

an initial portion of the suspension volume is moved into the chamber, statically retained and treated in the chamber, and moved out from the chamber, and

an additional portion of the suspension volume is moved into the chamber, retained and treated in the chamber, and moved out from the chamber.

29. (Original) The method of claim 1 wherein still further portions of the suspension volume are sequentially moved into the chamber, retained and treated in the chamber, and moved out from the chamber.

30. (Cancelled)

31. (Currently amended) An electroporation apparatus, comprising:

a chamber having at least a 2 milliliter capacity which includes electrodes, wherein the chamber has a geometric factor (cm^{-1}) defined by the quotient of the electrode gap squared (cm^2) divided by the chamber volume (cm^3), and wherein said geometric factor is less than ~~or equal to~~ 0.1 cm^{-1}) and greater than 0.000001 (cm^{-1}) ,

a pair of electroporation electrodes contained within said chamber,

an electroporation medium, carrying vesicles in suspension, contained in said chamber between said electroporation electrodes, wherein said suspension has a conductivity ~~between~~ in a range spanning greater than 0.001 to less than 100 milliSiemens/cm, and wherein the resistance of the suspension in

said chamber is greater than one ohm, wherein heating in the chamber is limited to low levels,

a source of pulsed voltages electrically connected to said electroporation electrodes, and

means for adding material to said chamber for electroporation treatment therein, and means for removing treated material from said chamber.

32. (Cancelled)

33. (Cancelled)

34. (Cancelled)

35. (Original) The apparatus of claim 31 wherein said chamber includes vent means for venting air when fluid is moved into said chamber.

36. (Cancelled)

37. (Cancelled)

38. (Original) The apparatus of claim 31 wherein said chamber includes a chamber inlet and a chamber outlet.

39. (Original) The apparatus of claim 31, further including:

a first reservoir, in fluid communication with said chamber

inlet, for containing said vesicle-bearing electroporation medium prior to introduction into said chamber,

a second reservoir, in fluid communication with said chamber inlet, for containing a chamber flushing material for flushing treated vesicle-bearing medium out from said chamber, and

a third reservoir, in fluid communication with said chamber outlet, for receiving treated, vesicle-bearing medium that is flushed out from said chamber.

40. (Cancelled)

41. (Cancelled)

42. (Previously added) The method of claim 1 wherein the time of treatment of the vesicles in the chamber is substantially the same for all vesicles.

43. (Cancelled)

44. (Cancelled)

45. (Cancelled)